

Application No.: 10/658019

Case No.: 58831US002

Remarks

Claims 1 to 16 are pending. Claims 1 to 16 are rejected.

§ 102 Rejections

Applicants respectfully submit that according to MPEP 2131 "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (citing *Verdegall Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)).

Claims 1, 4, 5, 7-8, 11 and 13-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Kandybowski (U. S. Patent 5,174,764).

The office action states in part:

Regarding claim 1, Kandybowski discloses a header connector 20 comprising: a header body 22 having a front wall 29, the front wall 29 having a plurality of first and second passageways 34 disposed between an internal surface and an external surface; a plurality of conductive pins 50 configured for insertion into the first passageways 34, each conductive pin 50 having a first end extending from the internal surface, an intermediate section disposed in the first passageway, and a surface mounting 28 extending from the external surface of the front wall 29 for surface mount contact 54, (figure 5), wherein the conductive pins 50 are not fully inserted into the first passageway (see figure 5) a plurality of shield blades 76 configured for insertion into the second passageways, each shield blade 76 having a first end extending from the internal surface, an intermediate section disposed in the second passageway, and a second end extending from the external surface of the front wall.

Regarding claim 4, Kandybowski discloses the conductive pin 50 moves longitudinally within the first passageways when the header connector 20 is assembled to a printed circuit board 120.

Regarding claim 5, Kandybowski discloses the shield blades 76 are fully inserted into the second passageways of the header body 22.

Regarding claim 7, Kandybowski discloses an interconnect system comprising: a printed circuit board 120 comprising a plurality of surface mount pads 122 and a plurality of conductive vias; and means for holding the header connector 20 to the printed circuit board 120, wherein when the header connector 20 is assembled to the printed circuit board 120, each conductive pin 50 of the header connector 20 move, in relation to the front wall 29 of the header body 22, longitudinally in the first passageway 34 to contact the surface mount pads and the second end of the shield blades 76 of the header connector mate with the conductive vias in the printed circuit board.

Regarding claim 8, Kandybowski discloses the means 78 for holding the header connector to the printed circuit board 120 is provided by frictional force created when the shield blades 76 mate with the conductive vias on the printed circuit board 120

Regarding claim 11, Kandybowski discloses the shield blades 76 are fully inserted into the second passageways 34 of the header body 22.

Regarding claim 13, Kandybowski discloses a method of assembling an interconnect system comprising the steps of: providing a printed circuit board 120 comprising a plurality of surface mount pads 122 and a plurality of conductive vias; and assembling the header connector 20 to the printed circuit board 120 such that the shield blades 76 in the header body 22 mate with the conductive vias in the printed circuit board and the conductive pins 50 in the header body move longitudinally to make contact with the surface mount pads 122 on the printed circuit board.

Application No.: 10/658019

Case No.: 58831US002

Regarding claim 14, Kandybowski discloses the step of holding the header connector to the printed circuit board 120,

Regarding claim 15, Kandybowski discloses frictional force created when the shield blades 76 mate with the conductive vias on the printed circuit board 120 holds the header connector to the printed board 120

Regarding claim 16, Kandybowski discloses the shield blades 76 of the header connector are fully inserted into the second passageways 34 of the header body.

The basis for the rejection above is essentially identical to the basis for the same rejection in the Office Action of March 17, 2004, which stated that the conductive pins 50 are not fully inserted into the first passageway as illustrated in Figure 5 of Kandybowski.

Applicants incorporate by reference their Response to the Office Action of March 17, 2004 having a mailing date of July 12, 2004, which stated:

"... Kandybowski states at col. 4, lines 9-18:

'As can be seen in FIGS. 5 and 6 the free end of second transverse portion 68 is spaced from the terminal portion 52 to allow the spring arm 60 to move compliantly toward the terminal member 50 during insertion of the terminal member 50 into the housing passageway 34. Upon full insertion of first terminal member 50 into passageway 34, the leading end of the second transverse portion 68 moves away from the terminal body section 52 when the retention means 66 engages the housing retention surface 42.' (emphasis added)

Although the specification goes on to describe how Fig. 6 shows the action of terminal member 50 when the header 22 is mounted to circuit board 120, the Kandybowski disclosure clearly states that Fig. 5 shows a fully inserted terminal member 50."

The present Office Action state, at p. 7, paragraph 10, in the Response to Arguments section:

"Applicant, on the remarks, page 7, lines 1-3, argues that Kandybowski does not disclose a fully inserted terminal member. The Examiner respectfully disagrees. On Column 3, lines 1-5, see figure 5 shows fully insert terminal member."

Applicants hereby submit:

Application No.: 10/658019

Case No.: 58831US002

Applicants agree, as they previously stated, that figure 5 does show fully inserted terminal members. Because the present claims state that the terminals are not fully inserted, Applicants again submit that the reference does not describe every element of the claimed invention.

Based on the foregoing, Applicant(s) submit that the cited reference cannot support a 35 U.S.C. 102 (b) rejection and respectfully requests that the rejection be withdrawn.

§ 103 Rejections

Applicants respectfully submit that according to MPEP 2142, to establish a case of prima facie obviousness, three basic criteria must be met: 1) there must be some suggestion or motivation, either in the references or generally known to one skilled in the art, to modify or combine reference teachings, 2) there must be reasonable expectation of success, and 3) the prior art references must teach or suggest all the claim limitations. The ability to modify the method of the references is not sufficient. The reference(s) must provide a motivation or reason for making the changes. *Ex parte Chicago Rawhide Manufacturing Co.*, 226 USPQ 438 (PTO Bd. App. 1984).

Claims 1 and 6 are rejected under 35 U.S.C. 103(b) as being anticipated by Ramey (U. S. Patent 6,231,391) in view of Bright (U. S. Patent 4,726,793).

The office action states in part:

Regarding claim 1, Ramey discloses a header connector 400 comprising: a header body 402 having a front wall 410, the front wall 410 having a plurality of first and second passageways 416, 418 disposed between an internal surface and an external surface 422, 424; a plurality of conductive pins 404 configured for insertion into the first passageways 416, each conductive pin 404 having a first end extending from the internal surface, an intermediate section disposed in the first passageway 416, and a surface mounting 452 extending from the external surface of the front wall 410, wherein the conductive pins 410 are inserted into the first passageway a plurality of shield blades 406 configured for insertion into the second passageways 418, each shield blade 406 having a first end extending from the internal surface 422, an intermediate section disposed in the second passageway 418, and a second end extending from the external surface of the front wall 410. Terms "not fully inserted" sets for no clear limitation in absence of "pin moves when mounted" terms see claim 4. Randy discloses the claimed invention except for surface mount contact. Bright discloses the surface mount contact at figure 7a, Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Randy to provide the surface mount contact as taught by Bright so as to save expensive of forming holes in the printed circuit board.

Regarding claim 6, Ramey discloses the intermediate portion of the shield blade 406 has a generally right angle shield portion

Application No.: 10/658019

Case No.: 58831US002

The Office Action states that the conductive pins 404 in Ramey have a surface mounting 452 extending from the external surface of the front wall 410. However, Ramey actually states that 422 is the internal surface of the front wall 410. (See Ramey, col. 11, lines 40-48) Ramey further states that first end 452 of signal pin 404 extends from the internal surface 422 of front wall 410 for inserting into windows 130 of socket connector 100. (See Ramey, col. 11, lines 51-61) Second end 454 extends from external surface 424 of front wall 410. (See Ramey, Fig. 15) Furthermore, second end 454 is configured for insertion into opening 36 in a printed circuit board 34 (See Ramey, col. 11, lines 59-61), and is therefore not a surface mount.

The Office Action subsequently states: "Randy [sic] discloses the claimed invention except for surface mount contact. Bright discloses the surface mount contact at figure 7a. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Randy [sic] to provide the surface mount contact as taught by Bright so as to save expensive of forming holes in the printed circuit board."

Applicants respectfully submit that the references cannot support a case of *prima facie* obviousness as to the claims because, among other possible reasons, the cited references do not provide a motivation or suggest for replacing the feed-through contacts of Ramey with the surface mount contacts of Bright because it would require redesigning the board, the header, and the pins to have surface contacts. Although the Examiner states that it would save the expense of forming holes in the printed circuit board, the Examiner has presented no evidence that a board configured for surface contacts would be less expensive than one configured to accept pin contacts.

Applicants submit that the Examiner's combination of the Ramey and Bright references is based on improper hindsight. As stated in *In re Nomiya, Kohisa, and Matsumura*, 509 F.2d 566, 184 USPQ2d 607 (CCPA 1975): There must be a reason apparent at the time the invention was made to a person of ordinary skill in the art for applying the teaching at hand, or the use of the teaching as evidence of obviousness will entail prohibited hindsight.

Based on the foregoing, Applicant(s) submit that the cited references cannot support a 35 U.S.C. 103 (a) rejection and respectfully requests that the rejection be withdrawn.

Application No.: 10/658019

Case No.: 58831US002

Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kandybowski in view of Bright (U. S. Patent 4,726,793).

The office action states in part:

Regarding claims 2 and 9, Kandybowski discloses the claimed invention except for the second end of the conductive pin does not contain a spring element. Bright discloses the second end of the conductive pin does not contain a spring element. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to remove spring as taught by Bright so as simplify contact.

Applicants incorporate by reference their response to the 102 (b) rejection based on Kandybowski, above, and respectfully submit that the references cannot support a case of *prima facie* obviousness as to the claims because, among other possible reasons, the cited references do not provide a motivation or suggest for removing the spring element from the Kandybowski reference because the spring element is an integral part of the invention. For example, the Summary of the Invention section of Kandybowski states: "The present invention is directed to a connector assembly having first terminal members that are surface mountable and include spring arm portions that increase the normal force between the mating terminal and the circuit pad while remaining remote from the current path between the circuit board and terminal." Col. 1, lines 57-62. The Summary further states: "It is a further object of the invention to provide a surface mount terminal that has the increased compliancy of a spring arm without increasing the length of the current path nor affecting the range of manufacturing and assembly tolerances." Col. 2, lines 46-50.

Furthermore, the references cannot support a case of *prima facie* obviousness as to the claims because Bright does include a spring element. Contact element 40 includes a pair of spring arms 44. Bright, e.g., at col. 3, lines 33-36.

For these reasons, Applicant(s) submit that the cited references will not support a 103(a) rejection of the claims invention and request that the rejection be withdrawn.

Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kandybowski in view of Bright (U. S. Patent 4,726,793).

The office action states in part:

Regarding claims 3 and 10, Kandybowski discloses the claimed invention except for the second end of the conductive pin is substantially flat. Bright discloses the conductive pin is substantially flat 60. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kandybowski to provide the conductive pin is substantially flat as taught by Bright so as better connection

Application No.: 10/658019

Case No.: 58831US002

Applicants incorporate by reference their response to the 102 (b) rejection based on Kandybowski, above, and further submit that the references cannot support a case of *prima facie* obviousness as to the claims because, among other possible reasons, the cited references do not provide a motivation or suggest for modifying the pins of Kandybowski to make them substantially flat. The Examiner states that making the conductive pins of Kandybowski substantially flat will provide a better connection. However, as can be seen from, e.g., Figs. 5 and 6 of Kandybowski, if the pins are made substantially flat by removing connecting section 54, it appears that the connection will be worse because the pin may not project past mounting surface 28. If the pin is made flat by other means, it is not clear how this would effect the functioning of spring element 60.

For these reasons, Applicant(s) submit that the cited references will not support a 103(a) rejection of the claims invention and request that the rejection be withdrawn.

Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramey in view of Kandybowski.

The office action states in part:

Regarding claim 7 and 12, Ramey discloses the claimed invention except for the header connector is assembled to the printed circuit board each conductive pin of the header connector move in relation to the front wall of the header body. Kandybowski discloses the header connector is assembled to the printed circuit board each conductive pin of the header connector move in relation to the front wall of the header body. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ramey to provide for the header connector is assembled to the printed circuit board each conductive pin of the header connector move in relation to the front wall of the header body as taught by Kandybowski so as to provide better connection.

Applicants incorporate by reference their responses to the 102 (b) rejections based on Kandybowski and Ramey, above, and respectfully submit that the references cannot support a case of *prima facie* obviousness as to the claims. Contrary to the Examiner's statement that Ramey discloses the claimed invention except for the movement of the header pin, Ramey does not disclose a surface mount contact. Furthermore, the cited references do not provide a motivation or suggestion for replacing the feed-through contacts of Ramey with the surface mount contacts of Kandybowski. This would require redesigning the board, the header, and the pins.

Application No.: 10/658019

Case No.: 58831US002

For these reasons, Applicant(s) submit that the cited references will not support a 103(a) rejection of the claims invention and request that the rejection be withdrawn.

In addition to the foregoing arguments, Applicant(s) submit that a dependent claim should be considered allowable when its parent claim is allowed. *In re McCairn*, 1012 USPQ 411 (CCPA 1954). Accordingly, provided the independent claims are allowed, all claims depending therefrom should also be allowed.

Based on the foregoing, it is submitted that the application is in condition for allowance. Withdrawal of the rejections under 35 U.S.C. 102 and 103 is requested. Examination and reconsideration of the claims are requested. Allowance of the claims at an early date is solicited.

Respectfully submitted,

Jan 25, 2005
Date

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